Scott. II-27—20,000—16-11-49.

New (194) Department.

MS SERIES.

G.O. No. 1728

Dated 22-9-41

[Despatch Abstract.]

Forests - Preservation - Bellary - Hagari river - Sand Drifts - Prevention - by afforestation - Scheme - Sanctioned.

Agr Dept

O.M.No 18520-J/39 dt 7.7.39

Forests - Afforestation - Bellary Taluk - Siddiganamola village Sand drifts from Hagari river. Prevention

It is understood that great damage is being caused to a large stretch of land in the Bellary Taluk on the eastern side of the Hagari River near Siddiganamola village by the sand drifts from the river, and that a Scheme of afforestation along the eastern bank of the river to prevent the sand drifts at a cost of about Rs 10,000 has been prepared. The CF is requested to submit a detailed report in the matter.

RR
6.7.39

Rd. on 10/8/39

2

The CF

7/7

7/7

6/7/39.

Show VI Section to put up pp. about the periodical Compass returns to the Dist

C.F. 30.

FOREST DEPARTMENT. 32813

Received ..... 19 *Registered* 19

Subject.

Forests - Afforestation - Bellary taluk - Sidiginamola village - sand drifts from Hagari river - Prevention - Detailed report submitted.

Enclosures.
No. .....
.....
Spare copies .....

Ref. No. 6500/39-C1.

Station Chepauk, Madras., *Dated the* 20th October 1939

From (Name) J.C. Wilson, Esq., I.F.S.,

(Designation) Chief Conservator of Forests.

To The Secretary to the Government of Madras,

Development Department.

Sir,

Ref. Development Department memorandum No. I8520-I/39-1, dated 7-7-1939.

The Conservator, Bellary Circle reports that in July 1938 at the Bellary District Periodical Conference it was represented that drifting sand, emanating from the Hagari River, was interfering with the fertility of the soil, and the District Forest Officer of Anantapur was requested to report on the matter.

He suggested that the shifting sand could be fixed by afforestation, on the same lines as had proved

successful following on the formation of the Koka plantation in the same locality.

In 5-8 below a copy of the Conservator's report in the matter is enclosed. If the Government wish the Forest Department to undertake fixation of the shifting sand on some such lines as these suggested a detailed report will be prepared and submitted for their consideration.

/E

30/10/39.

For Chief Conservator of Forests.

K.P.N/24-x.

28/10/39.

Copy of letter No. F.1.556/39 dated 15th September 1939 from the Conservator of Forests, Bellary Circle, to the Chief Conservator of Forests, Madras.

Sub: Afforestation - Bellary Taluk - Sidiginamoola Village - Sand drifts from Hagari River - Prevention:

Ref: Chief Conservator's Ref.No.6500/39-D1 dated 20-7-39.

In this office No.F.1.556/39, dated 1-9-1939 I stated that the Collector and the Executive Engineer had been addressed for more specific information in the matter. Only the Collector has replied. He has stated that the cost of the scheme is about Rs.61,110/- as per details given below and not Rs.70,000/- as noted in the Government Memo. on the subject.

Cost of planting 640 acres at Rs.80-6-0 per acre.	51,440	0	0
Acquisition of patta lands of Paramadevanahalli	2,268	6	0
" Meenahalli	223	3	0
" Sidiginamoola	7,182	6	0
	61,113	15	0
	61,110	0	0

2. In the Bellary District Periodical Conference held on 7-7-1938 some of the members represented that the sand drifts from the Hagari River were over-running valuable agricultural lands rendering them less fertile or in some cases useless for further cultivation. The Collector referred this to the District Forest Officer, Anantapur for remarks. The District Forest Officer, (Mr.Hart) cited the Moka plantation as an instance by which the shifting sands of the Hagari River were successfully fixed and suggested that, if the villagers were willing to meet the expenditure, a strip one furlong long and one furlong wide could be planted each year on

the

the right bank of the Hagari river at a rough estimate of cost of Rs.30/- per acre. He also pointed out that the cost was high as temporary wells had to be dug to carry on regular watering of the plants in dry weather. The Collector considered that the Government alone should undertake the work as ryots would not evince interest and called for details for Rs.30/- per acre as estimated by the District Forest Officer. The Collector suggested that the tree-planting might commence from the Hagari bridge and proceed northwards to link up with the Moka plantations. Mr. Clear was of opinion that it should begin about 3 furlongs further south i.e. from Paramadevanahalli village. The Working Plans Officer Mr.V.S.Krishnaswamy and I inspected the locality recently and we came to the conclusion that the new plantation should join up with the Agricultural Farm which is situated just a furlong or two south of Paramadevanahalli on the Hagari bank.

1 D

3. The first stage of the work is to plant up 25 acres in a furlong wide strip on the right bank of the river starting from the Hagri Agricultural Farm and progressing yearly northwards till the Moka plantation was reached. It is proposed first to plant the right bank of the river, which is also its east bank, since the direction of the wind is from west to east. According to the estimate which is framed on the lines adopted, in Sriharikota of Nellore division the cost of planting an acre has been estimated at Rs.80-6-0 per acre the main details for which are:-

A fence of earth 2' high and 2' broad 7 furlongs long	72	0	0
Planting of aloes.	15	0	0
Planting of 25,000 plants, watering on date of planting and replacing casualities at 1-0-0 per 1000	25	0	0
8 wells at Rs.10/- each	80	0	0
Watering June to March.	820	0	0
One shed for a Forest Guard	25	0	0
6000 C.Ft. of red or black earth at ¼C.Ft.for each pit	37	8	0
Pay of 1 Forest Guard for 14 months at Rs.15/-	210	0	0
Contingencies.	35	8	0
Cost of nursery	50	0	0
	1,370	0	0

This is for 25 acres which works out to	54	13	0
For 2nd year watering charges for an acre.	24	9	0
From 3rd year at Re.1/- per acre for petty items which can be attended to by the Forest Guard.	1	0	0
	80	6	0

Since fencing materials are scarce a live aloe fence is proposed to be planted by the trench and ridge method. The area proposed to be planted will have to be declared a reserved land.

A spacing of 7' x 7' is suggested -

vide Chief Conservator's remarks at p 9 below

Species to be planted are

Azadirachta indica.
Albizzia lebbek.
Dalbergia latifolia — Near the river's edge.
Pithecolobium dulce.
Pngamia glabra.

Melia azadirachta.
Tamarindus indica
Albizzia amara
Lagerstroemia flosreginae — On the leeward side.
Stephygyne parviflora
Dolichandrone crispa
Sapindus emarginatus.

Sandal to be introduced eventually. A strip of 10' wide adjacent to M.F.L.Water edge will not be planted.

4. I feel that the width of the strip to be planted ought to be 2 furlongs. Anything less than that may not achieve the object in view, adequately.

In Moka plantation, the width is, Block A - 4 furlongs, Block B-6 furlongs.

The chief item of cost is the watering. Monsoon in these parts is freakish. It has a tendency to hold off just when the seeds are germinating. Periods of drought are long and uncertain but if we can only ensure some method of irriga-

irrigation, it will considerably improve the chances of success of the plantations. Bellary receives its water from the Hagari Pumping Station, which is proposed to be enlarged by sinking more wells in the river bed. When this is done it might be possible to get water (by purchase if necessary) and raise irrigated plantations like those of Changamanga or Chichawatni of the Punjab or those near Mettupalem. Till that materialises we shall have to depend upon wells dug on the spot. Instead of temporary well in sandy tracts which are liable to collapse every now and again tube wells can be sunk at intervals of 1 furlong all along the strips; they need not be deep as the subsoil water level will be fairly high being so near the river bank. From these tube wells water can be distributed in the area to be planted by a system of channels or stored in tanks to facilitate watering by coolies.

Various regeneration methods also can be tried here.

Cultivation is seen being practised in the sand blown lands. Perhaps it may be possible to employ the kumri method for raising the plantations.

The wind causing the drift of sand from the Hagari river bed blows from West to East. To break the force of the wind similar shelter belt of plantation on the left bank of the river which is also its western bank is desirable. This will minimise the drifting of sand and afford better protection to the valuable fields on the leeward side of the proposed shelter belt on the right bank of the river.

A sketch illustrating the above proposals is enclosed. The scheme may be recommended to the Government for sanction.

Chief Conservator of Forests' remarks:

Minor Forest Produce trees will be best as we do not want eventually to have to fell, and they will produce revenue indefinitely. Cashew (Anacardium occidentale) does very well in sandy soil if irrigated. Sapindus also provides a valuable Minor Forest Produce in the form of soapnut. Tamarind might do well. Neem would also do, and Pongamia perhaps also we might consider leaf fodder being species, e.g. Yepi, and bamboo.

R 5761 F.

14th September 1939.

SECRETARY TO GOVERNMENT
24 OCT 1939
REVENUE DEPARTMENT

From

T.Subrahamanyam,
Asst. Secretary, Congress Legislature Party,
"Congress House", Mount Road, Madras.

To

Hon'ble Sri T.Prakasam Pantulu Garu,
Minister for Revenue, Govt. of Madras,
M a d r a s.

Dear Sir,

1 Sri H.Sitarama Reddi, M.L.A., and some other persons from Bellary have been urging the need of promptly stopping the spread of sand drifts on the eastern bank of the river Hagari between Paramadevanapalli and ~~Sidigi-namala~~ Chintakunta villages in Bellary district. The sand is spreading every year over more and more cultivated land and thus hundreds of acres of good ~~ka~~ black cotton soil are becoming waste. The Chintakunta - Alur - Adoni road which was intended to be an all-weather road is becoming impassable at several places between the Hagari bridge and ~~Sidigina-mala~~ Chintakunta village on account of sand of several feet in depth, covering the road.

2 I have had experience of the hardships caused to the vehicles passing this road. I have also seen the increasing and immense loss to the villagers whose cultivated land is being fast converted into waste land as a result of the spreading of the sand dune.

3 I request you to kindly see that prompt steps are taken to prevent further loss to the villagers by afforestation. Please allow me to add that afforestation can be effective and successful ~~it~~ if it is undertaken by the Government through the concerned departments and it should not be left to private individuals who have neither the means nor experience to tackle promptly and effectively this urgent problem.

Yours sincerely,

T. Subrahmanyam

32729

2-NOV 1939
REVENUE DEPARTMENT

Revenue Deptt.

ev. no.
Ro 5761 7/38-1
1-11-38

Devt. Deptt no.

Dev. Deptt.

Endt. no. 3279 29 T/B3 dt.

Forwarded to the Chief Conservator of Forests for disposal

Asstt. Secy. to Govt.
2.11.

To the Chief Conservator of Forests.

4
75/4

Dev. Dept

R. O.C. 1-3 4 T.K.M.1 6-8 Tamil 9. UU.9.

O. m. no. 18520 I/38. 10/130 I/40-1 D) 15.4

Sub Afforestation - Hagari river prevention of sand drift.

Ref from the C. C. F. No 6500/38. C d. 20. 10. 39

1, 3-9 cys

It has been represented that sand drifts on the east bank of the Hagari river between Paramadevanapalli and Chinnakunta villages in Bellary dist. make hundreds of acres of good cultivable black cotton soil unfit for cultivation and the Chintakunta - Alur - Adoni road impassable at several places. It has been suggested that the shifting sand could be fixed by afforestation. The Board of Rev. is requested to offer its remarks in the matter with special reference to the proposed item of the cost of the Scheme of afforestation. The marginal copies of correspondence noted in the margin and other papers are forwarded herewith.

A, 11 cys

B/o 3 cys

1 & Copy of O.m. no. 18520 I/38-1 d 7.7.39
2. Copy of C.C.'s rg. no. 6500/38. C1. d. 20.10.39.
3. Copy of letter from Sri T. Subramanyam d. 16.9.39.

11 cys

to the Board for its reference.

12/4/60

To

The Board of Rev. ✓
(w.l.a. encl.).

Copy to the C.C.F. ✓
(w.l.a. encl.)
" " C.E. (D). ✓
(w.l.a. encl).

E.R. 16.5.460.
" 24 - 460

Dispd. under endn.
17/4.

Dev. Dept.

42/2917

Govt. no. 10130 D/40-2 of 29/7

Sub. Afforestation - Sagari river. prevention of sand drift.

Ref Govt. memo. no. 10130 D/40-1 dt. 15.4.40.

The above reference has been pending with the Board of Rev. for over three months. The Board is requested to state when its reply may be expected. to treat the matter as urgent and to state by 12.7. when its reply may be expected

Govt 22/7/40

RC 23/7/40

reported in June 40 as reply to a reminder that the Collr's reply had been rcd and that the Board's reply would be asked at early

To person. The Board is requested to submit its

The Board of Rev

30.7.40

reply by 10.8.40

Govt 28/7/40

Pp 13-14 cf

This is one of the old files. we got a report from the Collr and have made a reference to the Board of Rev at the instance of the Rev. Deptt (P.9 M) It is more than three months since the Bd was addressed. The Bd has

Pp 3-4 cf

Pp 13 cf

2/16

been reporting in reply to reminders [illegible] that the matter is pending in the Collector. In its latest reply (27 6/40) it stated that the Collr's reply has been read & that it would be sending its report "as early as possible". The report on not receiving the Spl. O.M. reminder may now go.

RL
23/6/40

17

C.F. 31—12,006—28-11-39

Revenue **DEPARTMENT.**

CURRENT No. 21883

Received 10 AUG 1940 19 . *Registered* 19

ASSISTANT SECRETARY TO GOVERNMENT DEVELOPMENT DEPARTMENT

Subject.

FOREST - (Bellary) - Hagari River sand drifts - Prevention by afforestation - Proposals submitted.

Reference. E. No. 2305-40-2.

Station Madras , *Dated the* 9th August 1940.

From

R.A. Gopalaswami Esq.,I.C.S.,
Joint Secretary,

Board of Revenue.

C.A. Henderson Esq.,C.S.I.,V.D.,I.C.S.,
Commissioner of Land Revenue and Irrigation.

-

Read the following.-

Memorandum from Government, Development Department, No. Pp 13-14 above 10130-I-40-1 dated 15-4-40.

ii

Letter from M. Karamatullah Esq.,I.C.S., Collector of Bellary, D.Dis.No. 1941/40 dated 24--5--1940.

iii

Memorandum from Government, Development Department, No. 10 15 above 10130-I-40-2 dated 29--7--40.

Reference.-

Submitted to the Government.

2. The problem of preventing the sand drifts along the eastern bank of the River Hagari by a scheme of afforestation is a vast one and expensive. The ryots are reported to have no interest in working the scheme. In view of the fact that it is found difficult to induce any ryots or local body to take up such a costly scheme or even to contribute a portion of the cost and as the matter is neither urgent nor likely to cause grave inconvenience to the public, the -- Collector considers that the scheme may be postponed. The Board however considers that in a concrete case like this, a successful demonstration even on a small scale might serve to create interest. in the neighbourhood and thereby evoke that degree of intelligent co-operation for the ryots which is now lacking and which is essential for undertaking any really comprehensive measure in the future. For this purpose, the Board thinks something should be undertaken, and in its opinion, the question will depend upon how much the Government would be prepared to spend on a demonstration, i.e., to what extent the protection should run in length. The selection of the area required for such demonstration may be left to the choice of the Forest Department and that ~~depot~~ the Board suggests, may also ~~condier~~ Consider the use of screwpine as well as aloe for the preliminary fencing. The Board, therefore, recommends that a piecemeal demonstration ought to be undertaken to the extent to which the Government can afford to allot funds to the -- Forest Department for the purpose.

3. In this connection the Board submits that a similar question of combating the Hagari Channel sand drifts in Malyam -- village, Rayadrug Taluk, Bellary District was raised by the Collector of Bellary and a reference has been made to him calling for further information regarding afforestation. The

Board

Board proposes to examine both the questions as a whole in all its aspects but such an examination will take a long time and may also involve expenditure on a scale which the Government cannot undertake at the present time. It however considers that a small plantation proved effective would be a good -- beginning.

for Joint Secretary.

To the Secretary to Government,
Development Department.

M.K.G/9.8.

9/8/60

Letter from M. Karamatullah Esq., I.C.S., Collector of Bellary, D.Dis. No. 1941/40 dated 24-5-1940 to the Secretary to the Board of Revenue, Madras.

Subject:- FOREST - Bellary - Hagari River - Sand drifts Prevention of by afforestation - Proposals submitted.

Ref:- Board's Ref. E. 2305/40-1 dated 22-4-1940.

The proposal to afforest the Eastern bank of the Hagari in order to prevent fields being sanded was considered in detail in consultation with the Forest Department, when the question was raised at the quarterly District Periodical Conference held on 7-7-1938. The District Forest Officer, Anantapur, suggested that plantation may first be tried on a small area of 10 acres every year at a provisionally estimated cost of Rs.30/- per acre. The scheme was calculated to extend over a period of sixty years before completion. The District Forest Officer was asked to send a detailed estimate of the scheme. He then proposed to try afforestation on the lines of the Moka casurina plantations on a strip of land along the Hagari eastern bank commencing from the Hagari bridge and proceeding towards Moka. The District Forest Officer estimated the cost at Rs.80-6-0 an acre inclusive of supervision and establishment charges and recommended that the scheme may be tried in the first instance in an area of 25 acres along the Eastern bank of Hagari river starting from the Hagari railway station and progressing yearly northwards till the Moka Plantations are reached, i.e., a belt of one furlong in width along the bank. This experimental scheme was estimated to cost about Rs.2000/- in all, as the land is Hagari river Poramboke and no acquisition of land would be involved. The District Forest Officer wanted to start the experiment near the Hagari railwa station where the country is badly affected by drifting sands and then to extend the scheme yearly as experience is gained by local labour in the matter of plantations. But when this proposal was referred to the Conservator of Forests, Bellary, he recommended that the plantation should

should be started about 3 furlongs further south from Paramadevanahalli village and continued Northwards towards Moka. The distance from Paramadevanahalli to the Moka plantations is roughly about 8 miles. The approximate area to be planted will be 640 acres (8 miles long and 1 furlong broad) including some private lands in Sidiginamola, Meenahalli and Paramadevanahalli villages which it is estimated will cost about Rs.9674/- to acquire. The approximate cost of planting trees and acquiring private lands was estimated at Rs. 61,114/-

(viz.,) Cost of Planting trees on 640 acres at Rs.80-6-0 per acre as estimated by Dt. Forest Officer.	Rs.51440/-.
Cost of acquisition of lands.	Rs.9674/-.
Total.	Rs.61,114/-

The details of the scheme are contained in the letter of the Chief Conservator of Forests, Ref. C.No.6500/39 C-1 dated 20-10-39 addressed to the Secretary to Government, Development Department, copy of which is communicated along with the Board's Reference quoted above. These proposals were not submitted to the Board in view of the instructions of the Government received in October '39 regarding the curtailment of expenditure and the scheme was dropped by my predecessor, Mr. A.D. Crombie., I.C.S., in view of the need for retrenchment during the time of war.

3 It is difficult in this part of the country to induce any ryots or any local body to take up this costly scheme or even to contribute a portion of its cost as they have neither the means nor interest in working the scheme. The proposed forest will be the property of Government and the income from it will be a source of revenue to Government as is the Moka plantation. For these reasons, pernaps Mr. J.W. Pritchard I.C.S., the then Collector in 1938 considered that Government alone will have to undertake the scheme and started investigation. As the matter is neither urgent nor imperative or likely to cause grave inconvenience to the public if postponed, the proposal was not proceeded with.

****

9/8.

25 1/2/41 Out

Dev. Dept.

Gen. No. 10130-C./40.4 d 24.10.40

Forests — Bellary — Hagari River Sand drifts — fixation by afforestation.

34 C.F

Ref. Letter from the C.C.F. Ref No. 6500/39-Q d 20-10-39.

The Govt. understand that a considerable amount of damage to agricultural land has already been done by the drift Sand — and that the problem is a serious one. They however consider that it would be sufficient to plant a belt of Casuarina trees one furlong wide for eight miles down from the Hagari bridge. The C.C.F. is requested to examine this suggestion — and to submit a detailed

16

24/

including an estimate of the Cost involved,
report, for the Consideration
of Govt.

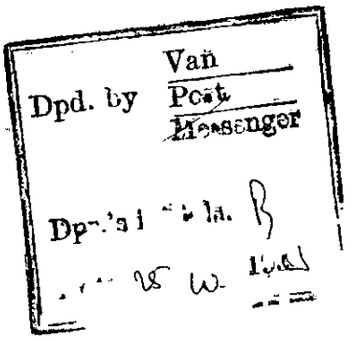
Cu
16 x cw

Cm
17 6 40

M
16/12/40.

To M-C-F.

Rem. 15 12 - 1940.



C.F. 30.

FOREST **DEPARTMENT.**

ASSISTANT SECRETARY TO GOVERNMENT
18 JAN 1941
DEVELOPMENT DEPARTMENT

Received ... 18 JAN 1941 ... 19 . *Registered* ... 1921 ... 19

Subject.

FOREST - Sandhills -

Bellary - Hagari river - Prevention by afforestation.

UNDER SECRETARY
20 JAN 1941
DEVELOPMENT DEPARTMENT

ENCLOSURES.
No. .....
Spare copies .....

Reference No. 6500-39-D1.

Station Madras ., *Dated the* 16th January 1941.

From (Name) W.G. Dyson Esq., I.F.S.,
(Designation) Chief Conservator of Forests.

To The Secretary to the Government of Madras,
Development Department

Sir,

Reference: Development Department Memorandum No. 10130 C/40-4 dated the 24th October 1940.

I submit a scheme drawn up by the District Forest Officer, Anantapur, with a copy of the Bellary Circle Conservator's covering letter R.C.A1-2168/40, dated the 28th December 1940.

Local experience with casuarina has not been encouraging either at the departmental plantations at Moka or at the Bellary water works. The present

Conservator

Conservator and his predecessor favour the broad leaved species which have been successfully established at Moka; but tentative work with casuarina is provided for. A disadvantage of this species, even if it proved suited to the local conditions is that it does not reproduce itself by coppice, so that working it would involve a periodical clearing and replanting with exposure of the sand to wind, thus partly defeating the object in view. Its rapid growth and high volume production of good fuel and poles is however much in its favour, and these considerations might outweigh its disadvantages if it proves reasonably well suited to the difficult local conditions. It is therefore worth experiment: if casuarina can be grown the financial aspect of the scheme would be greatly improved.

The plantations at Moka made some thirty years ago when wages were lower cost Rs.123/- per acre. The present estimate is Rs.129/- per acre. Though I am hopeful that a considerable reduction can be made on this figure it is not safe to assume that a big reduction on the Moka actuals will prove possible. On fencing, I think, we can save. With a Forest Guard and watcher living on the spot it is unlikely that the outer fence of Boswellia etc. and bamboo provided in the District Forest Officer's scheme at a cost of about Rs.11/- per acre will prove necessary; and watering charges have rightly been estimated on a generous scale for the initial work.

I do not advise that the whole scheme be sanctioned at this stage. It may be accepted in principle and work at the rate of twentyfive acres a year for the next two

years

years may be approved. In the light of the experience thus gained the scheme will then be reviewed and if necessary revised. If the early work goes well it will be desirable to complete the planting in a much shorter period than twenty years.

16.1.41

for Chief Conservator of Forests.

DL 1611.

Enclosures: Copy of Dt.Forest Officer's Scheme. 5

Copy of Bellary Circle Conservator's letter.

1 Map placed below

2/1641.

oav.
16.1

Copy of letter from the Conservator of Forests, Bellary Circle to the Chief Conservator of Forests, R.C.A.1. 2168/40 dated the 28th December 1940.

Ref: Your Ref.No.6500-39-D1, dated the 4th November 1940.

Sub: Forests- Bellary - Hagari river and sand drifts - prevention by afforestation - report submitted.

The Government considered that a belt of casuarina trees should be ~~back~~ planted. But it is a species that has not given good results in the past. My predecess Mr. Clear wrote as follows in this connection in 1938:

> "Casuarina is apt to die out in Moka plantation, also at the Hagari water works where a small plantation was raised."

He favoured broad leaved species such as Margosa, Albizzia lebbek, Pongemia glabra, Dalbergia sissoo and Inga dulcis. I agree with Mr.Clear's views. Casuarina is not indicated for the climate and the sub-soil water conditions of the dry Deccan table land. Because there is a sandy stretch, it does not mean that it is suitable for casuarina. We have to consider the climate, the rainfall, the soil below the sand and the sub-soil water level. From the point of these factors and our past experience with casuarina, it does not appear to be a suitable species to form the main crop. The absence of atmospheric humidity and the long drought will kill the casuarina, the soil below the sand being black cotton will not suit it, the rainfall is too little and badly distributed, and the sub-soil water level being deep will not suit the shallow rooted

rooted Casuarina. Another objection to casuraina as main crop is that it involves clearfelling and replanting at every 10 years which is not suitable for these sand drifts as the main object of the plantation is to keep the ground covered all the time.

2. A detailed report along with a sketch and a rough estimate of cost for planting 25 acres was already submitted with my No.Ml. 556/39 dated 15-9-1939. The estimate was based upon the one prepared by Mr. Hart, who was the District Forest Officer in 1938. I asked the present District Forest Officer whether he had any changes to suggest in that estimate. He has however discarded it and has submitted another one of his own of which I send herewith a copy. Whether it is casuarin or broad leaved species, the estimate is the same as all the operations are identical in both cases, and it does not include the cost of acquisition of private lands if any. Mr. Hart had estimated at Rs.80/- per acre but Mr.Rao's estimate comes to Rs.129/- per acre. The Moka plantations which had been raised on the Hagari banks some 30 years ago had cost Rs.123/- per acre. As the cost of labour has gone up since then, it is possible that Mr.Rao's estimate of Rs.129/- per acre may be nearer the mark. The District Forest Officer explains the differences between his and Mr.Hart's estimates as follows:-

(1) The estimate of Mr.Hart did not provide for adequate number of temporary wells,

(2) The type of fencing provided by Mr.Hart would not be capable of yielding the return as the live fence of Boswella etc., species provided in the present estimate would.

(3) More liberal provision for watering has been made.

~~(4) The rate of~~

(4) The rate of wages adopted in Mr.Hart's estimate was found to be too low by Mr.Rao.

3. The total length to be planted is a little over 8 miles and taking a width of one furlong, the total area to be planted comes to about 650 acres and the cost of planting it based on the present estimate comes to Rs.83,850/-. If the belt to be planted is 2 furlongs wide, then the area and the cost will be exactly double.

4. A profit and loss statement as submitted by the District ForestOfficer is enclosed. It may be possible to improve on the profits by economies in expenditure as we gain experience.

5. It is desirable to make a beginning with these plantations at an early date. We might try 25 acres in the first year and increase it according to funds available. There is some 50 acres of [illegible] available between the Hagari bridge and the water works which may be tackled first and if the Government approve of the scheme, 25 acres of it will be attempted in 1941-42. The estimate submitted herewith is therefore for 25 acres of this modest beginning. As nurseries have to be raised immediately, orders on the scheme may be obtained from the Government as early as possible.

6. It will be necessary to declare the area to be planted as reserved land, for, without any legal status to the planted area, we cannot effectively keep

cattle

cattle and trespassers out of it. One furlong width of S.No.1 of Paramadevanahalli village and S.No.84 of Minahalli village may be taken up first. The whole of these survey numbers is between the Bellary water-works land and Hagari railway station, and will provide space for 2 years' planting, during which time we can see about the remaining areas to the north of the water works.

7. The survey numbers held on patta to the north of this area are:

Minahalli village - S.Nos.78, 79 and 80

Sidiginamola village - S.Nos. 128, 50, 547, 49, 43 to 45.

8. Whether these are to be acquired or not can be decided later on when the planting progresses northwards. If they are cultivated successfully it would indicate that the soil is not subject to the process of shifting and that these pattas will in themselves act as a buffer to the lands to the east. In this way we may be able to keep down the cost of land acquisition to the minimum requirements. The planting scheme need not be held up on that account, as certain portions are urgently in need of planting up.

9. The high flood level of the Hagari is below the Khandam stones of the Survey Nos. leaving a strip varying in width from 2 to 6 chains. It may be advisable to take up this strip also leaving a margin of safety of about 10 feet from the high flood level. We may plant it with shrubs like Ipomea or Vitex Negundo so that they may not obstruct the flow of water as a plantation would. I have already initiated a small experiment on this line near Moka on a plot 2 chains x 2 chains

in

in order to see what species of shrubs will suit the locality best.

10. The Hagari sand drift problem involves speciealised affor estation. We shall have to experiment in a number of ways and with a number of species for preventing the sand drift. We may have to try different species to see which comes up fast and well. The causes of the sand drift will have to be studied as also the rate of its drift and to what extent our plantations are putting up an effective barrier against it. The question of revenue from it ought not to be given prominence in this connection; for, the protection of the agricultural land and the country-side from invasion of the sand drift should in itself be a sufficient return for the outlay. We shall further go on experimenting to find out ~~what~~ which species give us the best return both in the main crop as well as in the fencing. The problem is no doubt an expensive and difficult one but if we persevere, we shall probably solve it in the course of time.

11. The source of this sand drift lies in the bed of the river. It is from there that the sand rises and some remedy has to be applied there. The river gets flood about half-a-dozen times during the monsoons and when the flood subsides, the river dwindles down to a thin streak of water and even that streak disappears in the hot weather. Then the whole wide stretch of the river bed is nothing else but a heap of sands which is ~~distributed~~ disturbed by

by the strong wind currents. Thus the sand drift starts from the bed of the river, and is then carried for long distances in an easterly direction. In the past, we raised 720 acres of plantations near Moka for preventing this and drift. Those plantations were 5 furlongs in width and even so we still find sand drifts beyond their limits though of course to a much less extent than in the exposed portions near the Hagari water works. It seems to me that not only will the Government's suggestion of one furlong width of the plantation be found inadequate but we shall have to tackle not less than 2 furlongs or perhaps even more. But that can be decided after we know how we get along with our initial plantations of one furlong width. Another thing that will have to be done is to tackle the bed of the river and to bind the sands there by a suitable species of either grass or herbs or shrubs such as Ipomea or Vitex, Negundo and if possible even to do some river training works so as to restrict the flow of water to a narrower channel instead of allowing the river to throw sand over a wide belt Perhaps some mechanical devices such as wooden screens or barriers on the windward side might give further aid to the plantations. But all that sort of work is one which should be attempted by the Public Works Department taking any help that they need from us. As far as we are concerned, we ought to extend our plantations up to the high flood level.

****

Estimate for planting 25 acres of East Bank of the Hagari river commencing from the Agricultural Farm Estate towards Paramadevanahalli during 1941-42 with broad-leaved indigenous species.

Report.

In order to stop the damage that is being annually caused by the drifting sands of the Hagari it is proposed to bind the sands on the eastern bank by planting up the strip of the river bed up to 20 chains width as local conditions may dictate. The first plantation will start from the Northern limit of the agricultural farm at Hagari. The proposal is to plant up the bank from the starting point up to the Moka plantations in the north. This will roughly give a length of 5 miles and a width of two furlongs to be planted. On an average, the width of the plantation will extend up to 20 chains (except where the water course of the river is closer to the eastern bank or where topes already exist). In the total, an approximate area of 1300 acres will have to be planted.

Area to be planted in first year 25 acres

For the start, an area of 25 acres will be taken up in the first year. After the local labourers and the staff on spot have learnt the technique of raising plantations by the experience gained in the first year, larger areas will be taken up annually for being planted. An annual area of about 70 acres can be taken up and the scheme of planting completed in 20 years' time. This amount of work may be manageable without special supervising and inspecting staff.

2. Sketch of the area to be planted.

A sketch showing the position of the 25 acres proposed to be planted in 1941 is enclosed.

3. Aloe fencing

The protection of the seedlings till they are established, is a problem. To put up a wire fencing is too

costly and difficult to repair by the Forest Guard. It is therefore proposed that an aloe should be raised so that after 3 or 4 years, it will not only form a fair quality fence, but will begin to yield some revenue annually and will ultimately pay off the cost of the fencing. The young aloe has to be protected for two years after planting till it establishes itself. Hence an outer fence of a temporary nature that will keep the young hedge out of reach of cattle is essential.

4. Live fence of valueless species. (Outer fence).

For the sake of efficiency and economy, it is proposed to obtain 5½' cuttings of useless species, like Boswellia serrata and Odina Wodiar or poinciana from the Fort Wall Series in Hospet Range and quickly plant them up 7' apart outside the hedge and to tie Bambusa Arundinacea splits to these posts. If the posts are cut and put in at the end of June, they will strike root and grow. The bamboo splits (Bambusa can be split into 4 thick pieces) can be tied in rows with yepi or other fibre which can be mended easily by the nursery staff. Not being in contact with water, these splits if tarred can be used for at least 3 years without perishing. Eventually, the posts after they strike root and grow, can be lopped for manure leaf and will yield revenue to cover their plantation costs. It may be therefore possible to recover this investment also in course of time. Hence it is proposed to first form a fence with live Boswellia etc., posts to which splits of Bambusa will be tied in 4 rows and then to raise aloe fencing within this enclosure.

Watering

Plenty of water is required for watering the plants. I imagine that watering may not be required after 2 years of planting and so it seems sufficient if we have temporary wells (big pits, dug with sloping sides) in the sands dotted over the 25 acres. At least 4 such wells are required for each acre, each just big enough to yield about 200 gallons of water daily as in Lower Godavari Division. These have to be kept clear of sand every day at a nominal cost, or

or else they will get silted up with the sand. If we have a smaller number of wells big semi permanent wells with lining will be needed to yield the required water. Lead of water to the plants will be enormous and hence it is much cheaper, just for a couple of years, to have these small wells.

6. Planting.

It is proposed to put in 2 plants in each pit 7' x 7'. After the plants are well established one of the plants may be cut down.

7. Espacement.

In order that the root system of the tender transplants may not be severely disturbed, it has been found advantageous to put in a thin 1½' stake at each pit and to tie the plants to the stake. This method is being adopted in the estimate.

8. Rainfall.

The annual rain fall in the locality is about 20" and most of it is received between July and September. Severe drought conditions normally prevail for at least 6 months in the year at a stretch from December to June. The north-east monsoon which help the plantations in the coastal district is almost absent in the locality. Hence watering has to be done during the dry months until the seedlings can stand the severe dry conditions here. The poor rainfall, unbroken period of drought and the very low atmospheric humidity, make the conditions here trying to the tender plants. There can thus be no comparison between the conditions along the East Coast and those at Hagari. It is essential therefore, to provide for adequate watering. If the season is favourable, there will be savings under the provision for watering and the actual cost of the plantation will be less, but we can never take a false step and fail in keeping up a plantation once started for want of funds and so provision has been made for the safe minimum watering required in a normal year. We may be able to fore-

38/

forecast with some correctness, the savings that could be effected at the end of February 1942. As there is no data available, strict supervision will be exercised, and reliable figures of cost collected during the first year for our guidance in later years.

9. Labour Supply.

Labour. Labour is available in the locality. Except for 15 days in November and 59 days in February and March when harvest and cotton season is on, we can get labour at Re.0-4-0 per cooly. In the harvest season we have to pay Re.0-5-0 per head per day. This fact has been taken into account in framing the details of cost. Women coolies here do not seem to like watering work. Moreover, they are far too slow, and are not chosen by local ryots for any quick work like watering. Until they are gradually trained for this kind of work there is bound to be some difficulty, but this may be overcome in a year or so.

10. Facilities for inspection of work.

There is a rest house at the Hagari Farm to occupy which general permission may be accorded to all officers of the Forest Department including the Range Officer.

11. Cost of planting 25 acres.

It will be seen from the details of estimate that the cost of planting up, fencing and maintaining the 25 acres plantation comes to Rs. 2630 or Rs. 105-3-2 per acre in the first year.

Of this amount Rs. 300/- is for fencing and Rs. 220/- is for the staff.

It is considered sufficient to mulch the seedlings in the second year from April 1942 and water them for 3 months during April, May and June. This will cost 30 plus 31 plus 30 or 91 days of watering at 25 coolies per day or Rs. 568-12-0 plus 31-4-0 as cost of mulching and other contingencies or Rs. 600/- for 25 acres. After this, the plantation requires no cost to keep up and

and watering is not considered necessary thereafter.

12. Cost of planting per acre.

The total cost of establishing a 25 acres plantation would be about Rs.3,230/- or Rs.129-3-2 per acre inclusive of pay of staff etc. It is quite likely that with favourable rains and with the application of practical knowledge of local conditions that we will acquire in the first year's work, we may be able to devise methods of economising. This will then help us to reduce the cost of the work.

The actual cost of planting at Moka is Rs.123/- per acre. It is probable that the present scheme may not finally cost more, in spite of considerable increased cost of wages etc.

13. Period of afforesting 1300 acres.

The scheme is proposed to be spread over 20 years. Thus the plantation of the first year will be 20 years old when the last plantation will be planted up.

14. Rough forecast of revenue.

It may be easily possible at that stage and without any damage to the area, to carry out fellings reserving sufficient standards as seed bearers etc., which may yield about Rs.40/-an acre. Apart from this, from the 15th year onwards, one may count upon a revenue from minor forest produce of about Rs.100/- per annum.

A revenue of Rs.40/- per acre for 20 years or an annual revenue of Rs.2/- per acre can be safely expected by judicious working of the plantation for an investment of Rs.125/-. Together with the minor forest produce revenue we may forecast a return of 2% on the investment. A statement of anticipated revenue and expenditure is enclosed.

The main object of the plantation is to fix the shifting sands and thereby prevent the sand drifts from over-running valuable agricultural lands, rendering them less fertile or in

in some cases useless for further cultivation. This indirect benefit in itself will more than counter-balance the money spent on the plantation.

Details of estimate for planting 25 acres.

		Cost.		
1.	Cutting 600 posts of green, Boswellia poinciana etc., cutting 5½' long 9" x 15" in girth including lead up to the Fort Wall Station in Bandri R.F. at Re.0-1-0 each.	Rs. 37	8	0
2.	Lead by rail to Hagari Ry.station in one waggon roughly... L.S.	50	0	0
3.	Lead from Hagari Ry.station to plantation site L.S.	10	0	0
4.	Cost of 4,000 [illegible] Bambusa Arundinacea (to be split ~~until~~ 4 and tied up 4 strands) or 300 bamboos at Re.0-8-0 each. Local rate is 10 annas per bamboo. But it is hoped that concessional rates will be allowed on larger order.	150	0	0
5.	Lead for Bamboo from Bellary to Hagari over 10 miles. L.S.	10	0	0
6.	Splitting Bamboos by Medara Coolies. L.S.	5	0	0
7.	Cost of fibre	1	0	0
8.	Planting 600 posts tarring and tying up cross pieces of bamboos--50 coolies at Re.0-4-0 per cooly.	12	0	0
9.	Cost of tar -- 1 tin.	4	8	0
10.	Cutting a drain 1' deep and 2' wide along the inner hedge and forming a mount to plant aloes over 4620 ft. about 8,400 c.ft. at Rs.4/- per 1,000 feet.	18	0	0
11.	Planting aloes along fence 2' apart including transport of aloe.	20	0	0
12.	Aligning and staking 7' x 7' at Re.0-8-0 an acre.	12	8	0
13.	Cost of 900 x 25 or 22,500 stakes 1½' to 2' long at Re.0-4-0 per stake in the coupe at Moka.	14	1	0
14.	Lead for 22,500 stakes from Moka. L.S.	3	0	0
15.	Digging 100 wells at Rs.2/- per well.	200	0	0
16.	Clearing the wells of silt twice a week on the average from a depth of 5' on the average or 8 times a month for 9 months (1-7-1941 to 31-3-1942) or 72 times at 1 cooly for 10 wells or 720 coolies at Re.0-4-0. ..	180	0	0
17.	Pulling up 45,000 plants from the nursery and transporting them to site L.S, ..	5	0	0
	C.O.	733	1	0

(P.T.o

		Cost.
	B.F.Rs.	733- 1- 0
18. Making pits at each stake, watering the pits, planting 2 plants at each stake and tying them to the stake with fibre at Re.1/- per 1000 plants.	45	0 0
19. Watering. Giving 2 a gallon of water per plant twice a day for 15 days after planting in July 1941 at 1 cooly per acre each time 25 x 2 or 50 coolies per day or 750 coolies at Re.0-4-0	187	8 0
Watering once a day for the next fifteen days in July after the first fortnight of planting 25 x 15=375 coolies at Re.0-4-0	93	12 0
20. Watering once in three days in August 1941 i.e. for 10 days at 1 cooly per acre per day--250 coolies.	62	8 0
21. -do- -do- in September for 10 days or 250 coolies.	62	8 0
22. Watering 10 days in October 250 coolies.	62	8 0
23. Watering 10 days in November at Re.0-5-0 a cooly for 50 coolies.	78	2 0
24. Watering 10 days in December -- 250 coolies at Re.0-4-0 a cooly.	62	8 0
25 -do- 31 days in January at 25 men per day or 775 coolies at Re.0-4-0	193	12 0
26. Watering once daily for 28 days in February 194- at 25 coolies daily at Re.0-5-0 each--700 coolies.	218	12 0
27. -do- 31 days in March at 25 coolies per day 775 coolies at Re.0-5-0	242	3 0
28. Contingencies for unforseen expenses, pots., etc.,	47	6 0
29. Pay of 1 Forest Guard and 1 Forest Watcher from 1-7-1941 to 31-3-1942 or 9 months at Rs.24-8-0 per month.	220	8 0
30. Nursery costs.	300	0 0
Total	2630	0 0

Rupees Two thousand six hundred and thirty only

N.B.- No acquisition costs of any private land that may fall in the planting belt has been included.

S p e c i f i-c-a t i o n.

Fencing. The area to be planted will be selected by the District Forest Officer. In June 1941, the 4 corners of the 25 acres plantation will be fixed and in the 3rd week of June, the cuttings will be obtained and put in 7' apart and 1' deep. Bambusa will be tied in 4 strands to the posts.

Inside this fence the ground will be dug 2' wide and 1' deep and the earth obtained heaped on the inner Hedge of the drain. Tubers of Aloe will be obtained and planted 2' apart on the ridge. The ridge will be 2½' within and parallel to the outer fence.

Wells. Suitable sites will be selected and temporary wells 25' long and 15' wide at top will be excavated at 4 per acre. They should be deep enough to give 100 gallons of water and the water surface inside should be 6' x 3' at least. There should be gradual slope on either side along the length of the wells t allow a man to get down and get up quickly from the well along the angle of repose of the sandy soil.

Staking. To plant at 7' x 7' espacement alignments will be made and stakes put in 7' x 7' over the 25 acres.

Planting. Previous to the day of planting the nursery beds will be copiously watered. On the day of planting a pit will be made large and deep enough to hold the root system of the seedlings at each stake and two seedlings put in each pit, and the seedlings tied to the stake. The seedlings will also be watered at the time of planting. Seedlings pulled out should be planted down on the same day and should not be left over to be planted the next day.

The planting should be undertaken as soon as the locality has had 2" at least of rainfall. The District Forest Officer if possible or at least the Range Officer will be present for supervising the planting.

Watering. On the day of planting the plants will be given one gallon of water each. Thereafter watering will be

done according to the details in the estimate of cost. On days of rain no watering should be done. The entries in the rain-gauge register at the Agricultural Farm at Hagari will be taken by the Range Officer as an index for rainy days.

Small pots holding a little more than one gallon of water (as in Lower Godavari Lower plantations) will be specially got made and one pot will be used for 2 plants. Bigger pots will be avoided as watering from them will cause depression in the soil around the seedlings.

Replacement of casualties.

Casualties will be replaced within the first 15 days and will be watered as in the original instance of planting for 15 days and twice a day.

Planting. Each row will consist of one species, no pure crop will be raised on any area except in 1 acre where casuarina will be tried as an experiment.

The Range Officer will keep a record of the conditions of the Casuarina plants to study their progress in the locality. Nim seeds will not be ready in February when the nursery beds will be sown. They will be raised in May and June and planted when they are 6" high in the nursery beds.

Casuarina plants (1500) may be obtained from the District Forest Officer, Guntur, in July 1941, if the nursery beds here fail.

Statement of profit and loss by planting up 25 acres of broad-leaved species on Hagari bank.

		Rs.
Expenditure.		
1.	Cost of raising nursery ..	300 0 0
2.	Cost of raising and maintaining a plantation of 25 acres during the first growing season.	2,330 0 0
3.	Cost of watering and mulching the plantation till the second monsoon breaks in. ..	600 0 0
		3,230 0 0
	Expenditure per acre of plantation 3230/25.	129 3 2
Revenue for 20 years from 25-acre plantation.		
1.	Anticipated revenue by sale of manure leaves and fibre from aloe fence from the 6th year for 14 years at Rs.15/- ..	210 0 0
2.	Anticipated revenue from the minor forest produce yielding species from the 6th year for 14 years. ..	70 0 0
3.	Anticipated revenue in 20th year inclusive of tamarind and items 1 and 2.above. ..	100 0 0
4.	-do- from 20th year by sale of silvicultural cuttings of overwood 40" x 25 ---1000 ...	1,000 0 0
		1,380 0 0
	Average revenue per acre per annum For 20 years after planting. 1380/ 25 x 20.	2-12-2⅖ or 2-12-0

Investment exclusive of interest on an acre of established plantation. Rs.129-3-2.

Therefore percentage return on investment = 2.2%.

Pt. Irone

Dev Dept

RVe 22/4

12 22/4

Dev. No. 10130 C/40-7 d. 21.4.41

Forests – Bellary –. Hagari river –. Sand. drift prevention by afforestation Ref. from the C.C.F. No. 6500/39/D1 dy 16-1-1941.

The proposal of the C.C.F. seems to be K. to plant up the 50 acres of paramboke land available during the first two years and to revise the scheme if necessary, in the light of the experience gained. The Govt think it not useful to consider ~~of~~ to plant compact blocks for experimental purposes, but that it would be better to plant a long thin line 4 or 5 trees wide at most, to be further widened and made ~~it~~ wider later on, if found necessary. The C.C.F. is accordingly requested to submit very early

~~Kindly~~ an estimate for planting a thin line about 10 yds ½ to begin with, for the entire distances.

S.No. 8
C.No 10/-
For Spring
Gray

To the C.E.E.

23.4.41

8/4/41

19.4.41

CM
11.4.41

Rem. 20-5-41. 1 2
10
Returnable on 31.5.41
Returned on -7.6.41 Error returned

Remr. issued on 31.5.41
Returnable on 12.6.41.
Returned on.

N.R issued on 18.6.41.
Returnable. 12.8.41.

C.F. 32.

Forest DEPARTMENT.

In reply, please quote number, date and short title.

Received ..... *Registered* 22391

ASSISTANT SECRETARY TO GOVERNMENT
20 AUG 1941
DEVELOPMENT DEPARTMENT

From (Name) W.G.Dyson Esq., I.F.S.,

(Designation) Chief Conservator of Forests,

Post Box ....., (Station) Chepauk, Madras.

Telegraphic Address .....

To

The Secretary to Government,
Development Department,
Fort St.George, Madras.

Refce. No.6500/39/pl *dated* 18th August 1941.

Sir,

Subject:-Forests - Bellary - Hagari river - Sand drifts - prevention by afforestation.

Reference:-Development Department Memorandum No. 10130-C/40-7, dated the 21st April 1941.

do. do. 10130-C/41, do. 25th April 1941.

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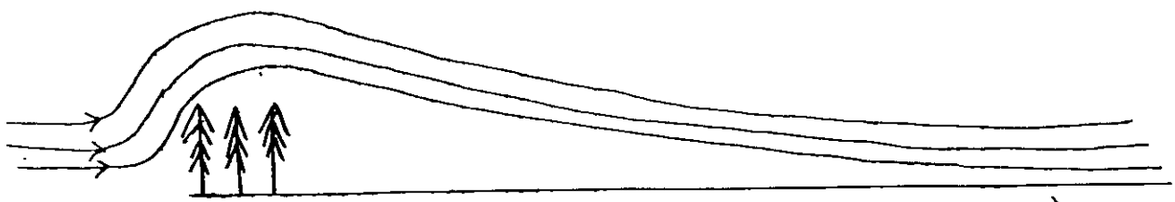
As desired by Government I submit an estimate for Rs.5,900/- for planting a narrow shelter-belt about ½ chain wide along the eastern bank of the Hagari river between the Agricultural Research Station and the Moka Plantation, a distance of about 8 miles.

Early this month I spent three days at Hagari studying this question. I am quite certain that a single belt of trees, whether ½ a chain wide or much wider, would have a negligible effect on the sand drifts, wherever it is placed. The height growth of trees in this locality will not exceed 40 feet, and the sheltering effect of the belt will not extend for more than 10 times its height, or for 100 yards or rather more to leeward. The extent of unstable sand which covers the whole of the river bed and a strip of varying width on its eastern side is many times greater than this; and over the whole area, except in the strip of 100 yards or so to the east of the single belt the wind would still sweep with unabated velocity. The effect of a shelter belt is not to arrest the wind, compelling it to start afresh as it were, and gradually to gather force on the leeward side; but to deflect the wind over the belt thus:-



← Zone of influence of shelter belt. →
(about 10 times the height of the trees.)

50/

-X-

Immediately under the lee of the belt an eddy forms, and there a part of the wind-borne sand is deposited.

3 Effectively to check the sand drift it will be necessary to have a succession of belts 100 to 150 yards apart, the first belt being in the river bed as low down as it is possible to raise tree growth satisfactorily (subject to any limitation the Public Works Department may consider necessary from the point of view of the obstruction of the run-off of flood-water); and the last near the outer edge of the sand-invaded area on the eastern bank. A belt at high flood level on the western bank is also desirable, with one or more belts at the 100-150 yard interval on the stream side of this where the course of the channel leaves room for these.

4 The river bed sand is of course the source of all the trouble. In that part of it where tree planting is impossible, or objectionable from the point of view causing obstruction to flood-water, it is probable that much could be done to encourage grasses and shrubby growth to fix the sand. - Mere closure to grazing would do much in this direction.

5 Although I am convinced that a single belt would be ineffective initial work could be on a single belt, though I should prefer to make it a chain instead of ½ a chain wide. The extra cost of this would be mainly the watering charges, amounting to about Rs.2,000/- for the full 8 miles, with some small additional cost in the second year.

6 I do not recommend the planting of the full 8 miles in the first year. The experience of the first year or two is certain to result in improved methods and reduced costs. I would do a few furlongs in the first year and aim at completing the 8 miles in about 3 years, the rate of progress depending on the success gained. At the same time I would experiment with short lengths to find out how far below high flood level trees can be grown successfully; and I would experiment with grasses shrubs and creepers in the river-bed itself.

7 Cattle, sheep and goats wander all over the sandy area destroying any growth that succeeds in establishing itself, and loosening the sand. Fencing for a long narrow belt is obviously out of the question; hence the considerable protective staff provided in the estimate. If the work is undertaken it will be necessary for the revenue authorities to help the District Forest Officer in persuading the villagers to keep their cattle away from the planted belts, explaining that these are being made, at much cost, in their interest. 1A

8 Eventually, I believe, this work will expand into a considerable scheme of afforestation, by no means confined to the 8 miles of river bank now under consideration. The financial possibilities of such a scheme can be better gauged after the 2 or 3 years preliminary work now proposed.

9 If the Government wish me to undertake plantation work in 1942 early orders are requested. Nursery work will have to start in December.

19.8.41

for Chief Conservator of Forests.

19.8.41.

DKS/19.8.

1918

/-

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Estimate for planting a shelter belt of five rows of trees, spaced 7' x 7', along the high flood level on the eastern bank of the Hagari river to a length of about 8 miles, between the Agricultural Research Station at Hagari and the Moka Plantation.

:::::::

FIRST YEAR:

		Rate	Amount Rs.
1.	Nursery costs	L.S.	320
2.	Wells (i.e., holes in the sand) 1 every 4 chains = 160 wells for 8 miles	Rs.2/-each	320
3.	Keeping wells free from sand as necessary.	L.S.	60
4.	Planting including stacking and removal and transport of plants from Nursery, at 28,000 stakes.	Rs.1/8 per 1000	42
5.	Watering as required, estimated at 250 days in the year. 32 coolies a day = 8,000 coolies.	4 as. each	2,000
6.	Pay of 2 Forest Guards at Rs.15 per mensem and 8 watchers at Rs.10 per mensem each for 12 months.		1,320
7.	Provision of brushwood wind-breaks as used by ryots for dry crops in sand-dune area locally 8 miles.	Rs.50- per mile	400
8.	Contingencies for sheds, barriers for fencing off passages left for cattle-tracks, purchase of pots etc.		328
	Total -First year		Rs. 4,800/-

SECOND YEAR:

9.	Replacements, watering if necessary. 32 acres.	Rs.20 per acre.	640
10.	One Forest Guard at Rs.15 per mensem and two watchers at Rs.10 per mensem.		420
11.	Contingencies.		60
	Total-Second year		1,120
	Add - First year		4,800
			5,920 or 5,900

Specification.

Species to be used:
- Pithecolobium dulce.
- Neem
- Albizzia lebbek
- Prosopis juliflora
- Tamarind
- Pongamia glabra

Method: By planting nursery seedlings of these species early in the South West monsoon, with generous provision for watering, which will be done as frequently and continued as long as is found necessary.

Espacement: 7' x 7'. The species used will alternate in single rows across the belt.

Nursery: In sandy soil, in the Hagari farm if possible. Will be effectively fenced and watered if necessary. Site must be sheltered from wind, but should not have overhead tree shade. Removable shade for the beds should be provided and used as necessary, but for a month before planting beds should not be shaded. At least 2 standard beds, properly formed and manured and watered as necessary to be provided for each acre to be planted. Basketted plants should be raised in the nursery sufficient for 10% of the planting to be done, as an experiment.

No reasonable expense should be spared in making a thorough success of the nursery, which is the foundation of successful plantation work.

One set of beds for each species should be sown in December for planting in the following June/July. But as the rate of growth and optimum size of plants under the conditions in question is not known with certainty, a second set of beds for each species will be sown in February / March.

Wind screens will be provided 10 feet to the windward of the westernmost line of plants. These will be of brushwood and similar to the screens used by ryots in like conditions

Corridors for passage through the belt will be provided as necessary. These will be one chain wide and will be formed by overlapping sections of the belt. The ends of the belt adjoining the corridors will be protected by an adequate brushwood fence.

Location of the belt will follow roughly the ~~xk~~ level of the lower edge of the Moka plantation (approximately H.F. Level)

Planting The area will be stacked 7' x 7'. Planting will be early in South West monsoon. Pitting will be done simultaneously with planting, the pits being of ample size to accommodate the roots without distortion.

Watering must be done liberally whenever necessary. Frequency and quantities cannot be laid down at this stage. It will be the responsibility of the officer in charge to see that a liberal supply of water is given.

::

SITARAMA REDDY, B.A.,B.L.,M.L.A.

VAKIL

BELLARY.

53.

Secy (Dev)

4.7.39

D 29th June 1939.

18520

RECEIVED TO GOVERNMENT
4-JUL 1939
DEVELOPMENT DEPARTMENT

Dear Sri Muniswamy Pillai,

Great damage is being caused to a large stretch of land in the Ballary Tk. of this District on the eastern side of the Hagari River near the village of - Sidiginamola, by the sand drifts from the Hagari River.

I suggested a scheme of afforestation along the eastern bank of the Hagari River to prevent the sand drifts more than a year ago to the Collector in the Periodical Conference. I now learn that a scheme has been prepared which would cost about Rs.70000/-.

Recently when Sri. T.Subramanyam, Assistant Secretary of our party was here I pointed out the loss already caused and the possible future loss by the sand drifts. He promised to speak to you. Please push through the scheme of - afforestation though it is a bit costly and help the ryots.

I think a personal inspection by you would be the best thing. Can you go over here some time in the end of August?

Yours sincerely,

H.Sitarama Reddy

To

The Hon'ble Sri. V.Muniswamy Pillai,
Minister for Agriculture,
Madras.

Dev Dept

A report may be called for from the C.F.
Draft submitted for approval

For Secy (Dev)
6/7/39

RR
6/7

Issued as mm. No. 18520-I/55-1 dt 7.11.55.
From the C.C.F. No. 6500/55 C1 dt 20.10.55.
From Sri Subrahmanyam's letter dt. Nil.

A.S.

Please see the letter from the C.C.F. and Sri Subrahmanyam at pp 2-5 ~~2-5~~ 3-11 ante.

The D.F.O. Anantapur has suggested that the Shifting cultivation may be fixed by afforestation. The cost is estimated at Rs 61,110/- The D.F.O suggests that the villagers may be asked to meet the expenditure. The Collector states that Govt. alone should undertake the work as regards would not evince interest. The C.C.F. states that, if the Govt. desire that the work should be undertaken by the Forest Dept. a detailed report will be prepared and submitted to Govt. It is unlikely that the Govt. will sanction the scheme at present in view of the need for economy. ~~The matter may be revived.~~

It is submitted that the question at pp 11-15 ante should be examined after D.F.O. The expenditure cannot be borne by Forest dept but that dept will have no objection to give advice. With these remarks the

P/50/ 2

file may be passed on to O and D

Ex
Draft

RB
2/11/39

S 'no
8/11/39

P.W.D.

Peter

Dw IP 520 T/PS-2
9.11.39.

P.W.D

To us:

The case has probably been remitted to this dept with the view that we should bear the cost of the scheme of afforestation. The Tirumalaikolunthapuram Case Tirunelveli dt where the cost of formation of a plantation on the left side of the Tirumalaikolunthapuram channel was met by us as different from the present one. The sand drift affected irrigation interest as it choked completely a drainage channel.

2. It does not appear that in this case of lands under any irrigation work in charge of the PWD are affected by a sand drift This case is therefore different from the case referred to above & this dept is therefore not concerned as things are at present. The Conservator's report refers to a similar case viz Moka

See note at P.F 7-8 of (U)
Ygo 523/3.1.39 (I)
2306/25.10.39 (K)
773/27.3.39 (L) pl

(There are no irrigation works in charge of PWD in Bellary TK)

'K' on P 7 ok

plantation. It is not known which dept undertook the work.

3. Before further action is taken in the matter the CE (Irr)* may be asked if the area liable to sand drift is within the Commandable area of the Tungabhadra partial scheme under consideration

* Concurrence of Dev may be presumed, since it is nothing new, and in the draft at 1/2 ante.

SBG Thobbe 23/11/39

This be CE (Irr) 25/11/39

24/11

CE (I)

Office of the Chief Engr. (Irrigation)

The area liable to sand drift lies within the commandable area of the Tungabhadra partial scheme.

Secy. P.W.D. U.O. 11/40

C.E.I.'s No.4043/39 C.E.P. dated 3-1-40.

SECRETARIAT TO GOVERNMENT
Section
28 NOV 1939
C. No. 4043
P.W.D., MADRAS

SECRETARIAT TO GOVERNMENT
D
10 JAN 1940
108
PUBLIC WORKS DEPARTMENT

P.W.D.

T.O.4.S.

Please see para 1 of the Dev Dept Note on p 2 ante. The cost of the scheme is estimated by the S.E.O. at Rs 61,110/- & the Collr thinks that Govt shd undertake the scheme at their cost. The CE says that if his dept is asked to do the work, a detailed report will be prepared & submd. The extent of the afforestation & the area to be protected from sand drift is 640 acres & is within the commandable

doble area of the Tungabhadra project partial scheme.

2. The question for consideration is whether the scheme shd be investigated in detail & if so to which Deptt's budget the expenditure shd be charged. The sand drift is a nuisance not only to agriculture but also for vehicular traffic. As the area is in the Tungabhadra Project area, a contribution from the project funds may reasonably be made as otherwise ~~though~~ though may not be successful. It may be mentioned in this connection that the CCT has separately, mooted proposals for the reservation of a belt of land two miles wide on each side of the Tungabhadra Project main & branch channels for the purpose of afforestation in areas unsuitable for wet cultivation. These proposals are being referred to the CE(I) for remarks in consultation with the Board of Revenue.

3. It is submitted that this Deptt is not primarily concerned with the proposal at this stage. The Tungabhadra Project has not yet matured & even the location of the areas to be irrigated under the partial scheme has not yet been definitely fixed. The question of a contribution from irrign funds does not

See p11 A

Ref) Agri 7/38

15

59

arise now. It may be considered when the project materialises & the area in question is included in its scope. For the present, the proposal is intended to benefit only agricultural land & facilitate road traffic. So, action has to be taken in Rev, Dev & LA depts in consultation with one another. The file may be returned to Dev.

Dep Prob
15/10/61

16/1

16/1

Dev

D/39-2
-40.

2 Dev Dept.

18 JAN 1940
DEVELOPMENT DEPARTMENT

To A.S. Dev Dept

The suggestion is that protective band from the Hagara river should be provided by afforestation along the eastern bank of the river in the area lying between the Hagara Agricultural Farm in the south to the Mbuka plantation in the north. The 66? reports that if the Govt wish the Forest Dept to undertake

Divisions of the Shigri ... and on some such lines as those suggested in the Conservator's letter he would prepare a detailed report and submit it for Consideration. The Collector estimates the cost of the scheme at Rs 61,110 while the Conservator has not stated what the scheme would cost.

2. The area proposed for afforestation is in the Tungabhadra Project area and the D[illegible] have stated that the question of making a contribution towards the cost of the scheme from the funds of the Project may be considered when the Project materialises. The scheme of afforestation is considered necessary in order to prevent spreading of sand every year over more and more cultivated land making hundreds of acres of good black cotton soil unfit for cultivation and over the Chintakunta - Aluru Road making it impassable in several places. The scheme should first be examined by the Revenue and

L. A. Deptt with reference to the above two points and how it should be financed a From the correspondence it is not clear whether this is the only area where sand drifts occur or and whether there are any other area also. The Forest Deptt is not primarily concerned with this scheme though it will render all assistance and even undertake plantation if necessary. The file may go to Revenue and L—A.

The Forest Deptt will help in affforesting the area to stop sand drift if it is decided that such a step is necessary to save agtl land and prevent sanding of roads. The question is for consideration of Rev and L.A Deptts.

RC 10/3/40 S CLA 10/3/40

Rev

LA

Rev. Deptt

To U.S.

Please see the note of

Dw 1893?/40-1
11. 3. 40.

ASSISTANT SECRETARY TO GOVERNMENT
9995
11 MAR 1940
REVENUE DEPARTMENT

pp. 3 - 8 ante which explain the proposal in this file. The Collector is said to have estimated the cost of ~~[illegible]~~ ~~[illegible]~~ afforestation at Rs. 61,110/- and to have considered that the cost should be borne by the Govt. The scheme is stated to be in the interest of agricultural land and road traffic. The Board does not appear to have been consulted in the matter and it seems necessary to call for its remarks before the remarks of the Dept. are offered. The Dev. Dept. may be requested to refer the proposal to the Board in the first instance, with special reference to the debit of the cost.

With these remarks, the file may be passed on to the L. A. Dept.

CRS
5.3.40.

S

LP
29/3

LA

Rev No. 999-F/40.
29.3.40.

This dept may agree with the suggestion of Rev at P above.

SV 1/4 for the Chief Secretary

SECRETARY TO GOVERNMENT
30 MAR 1940
L. & L. ADMINISTRATION DEPT.

63

Lord if this proposal were accepted, function as an all-weather road of the existing Bellary is to be worked to maintain, its share of the cost may be ascertained./

Dy Engr
Secy
15/4

KSR
4/4

Kurnool the correct name - site road.

I had inspection Chintakunta Jaladenbanda road a few months back and found the sand deposit only in 2 places = 11/7,8 & 14/4. As far as the road is concerned raising the road level at the locality at a cost of few hundreds of rupees will solve the problem and there is no need to spend Rs 61,110/ for the protection of the road. The sand drift is spreading over hundreds of acres of good black cotton soil and afforestation is needed to protect the lands and may be taken up for that purpose

SR
6/4

A

C 10408

Secy

The road is only slightly affected at present and can be put in order at small cost, it is agricultural interests which are seriously affected the interest of the Dt Bd in the matter is comparatively slight AO 8/4

Dept

ASSISTANT SECRETARY TO GOVERNMENT
19 APR 1940
10130
LA.M.O. 10408-1-C
D9/4/40

D9/4

11

AS

The remarks of the Board of Rev. with reference to para 1 of Govt diff's now explained may be invited. A draft D.O. is submitted for approval.

12.4.

[Formed as G.O. No 1013 OI from G/15-4-40] ff 13-14-I

[From the Board of Rev. no. 23 05-/Con 2 d. 9.8.40] ff 17-19 C/.

To AS. (Notes from file)

The cost of afforestation of about 640 acres on the eastern bank of the Hagari from Paramadevanahalli to the Moka plantations (about 8 miles in length) is estimated by the Collector at Rs 61,116/-. In view of the fact that it is found difficult to induce any ryots or local body to take up such a Costly Scheme or even to contribute a portion of the cost and as the matter is neither urgent nor likely to cause grave inconvenience to the public, the Collector considers that the Scheme could be postponed. Para 3 pp 22

The Board, however, considers that a successful demonstration even on a small scale might serve to create an interest in the neighbourhood and to enlighten public opinion so very

✓ H P 22 C 1

Cir no ff 18 r

necessary for undertaking any really Comprehensive Scheme in the future.

The extent of the area for demonstration will depend upon how much the Govt. are prepared to spend through the Forest Dept.. The Selection of the area for demonstration may be left to the Forest Dept.. The points for orders are

(1) Whether the entire Scheme may be postponed. or

(2) Whether a demonstration on a small Scale should be undertaken and if so,

(3) what should be the length of the demonstration strip and

(4) Whether the C.C.F. may be asked to select the area of demonstration and to submit detailed proposals.

2. The Rev. Dept.. may see the file again with reference to their notes at P on page 9 above. Perhaps Fin. may also see.

13.8.

13/8/60

P. ↪

13/66

Afforestation was proposed in this case with a view to preventing drifting sand emanating from the Hagari river interfering with cultivation (with the fertility of the soil) as well as preventing sanding up of roads. As regards the road affected, the Special Engineer who has inspected the locality has stated that the road is slightly affected and that afforestation is more in the interests of agriculture. It does not appear therefore that the District Board will take any interest in the question.

The Revenue Department wanted that the Board's report should be obtained. The Forest Department has not yet investigated this question and the Chief Conservator has stated that if Government wish to undertake afforestation for the purpose of fixing shifting sand he would submit a detailed report on the subject. The Collector's report shows that a scheme of planting trees over the area involved as well as the acquisition of some private lands for the purpose would cost Rs.61,114. This appears to be too costly a scheme to be undertaken in the present circumstances. The Collector has reported that the scheme is neither urgent nor likely to cause grave inconvenience to the public and that it is difficult to induce any ryots or any local body even to contribute a portion of its cost. The Board however considers that a demonstration

of planting trees on a small scale will serve to create some interest in the neighbourhood and evoke co-operation from the ryots and thinks that a small demonstration should be undertaken for the purpose to the extent funds could be allotted from the Forest Department Budget. If this proposal is agreed to, proposals may be called for from the D.C.F. through the Board of Revenue and he may be asked to select a small area for this demonstration and indicate what the cost would be.

Revenue may see for remarks - vide their note on pp.8-9 above.

Rev
15.8.40 S

Dev. wo 10130 1/40-3.
2.9.40

2977 F
3 SEP 1940

Rev

Dev Dept
This dept last saw ab pp 8-9 ante
We may agree with the Bd

2/S
S

24418

Rev wo 2977 F/40
3.9.40

ASSISTANT SECRETARY TO GOVERNMENT
1 - SEP 1940
DEVELOPMENT DEPARTMENT

Dev.

P.T.O.

15/68

Devt. Deptt.

13

As (Notes from Agenda)

This proposal in this file is to fix the ~~Cos~~ drifting sand from the Hagari river by afforestation along the eastern bank of the river. The total cost of the scheme is estimated at Rs 61,114. The sand drift is reported to cause damage to cultivable lands and also to the Chintakunta - Alur - Adoni road. It is reported that neither the ryots nor any local bodycorke indused to take up this scheme as they have neither the means nor any interest in working the scheme. The Collector of Bellary considers that the scheme is not urgent and may be safely postponed. The Board of Revenue however suggests a demonstration [in a small scale of planting trees] as this would serve to create some interest in the neighbourhood and evoke co[operation from the ryots] of the Board's suggestion were accepted it will have to be treated as a Part II scheme for 1941-42. It is not known what will be the cost involved in the Board's proposal.

'A' p 22. CF

para. 1 p 1 . 1

para. 3 p 22 F

'R' p 22 F.

'B' p 18 'F'

B p 18 CF

2. Attention is ~~solicited~~ to the W.O. note of the Finance Deptt regarding Part II schemes for 1941-'42

Before examining the Scheme further orders in circulation may be obtained as to whether the Scheme may be proceeded with, if it is not considered necessary to call for definite proposals with financial implications from the CCT for the piecemeal demonstration suggested by the Board

Ces
16/9/40
S

We may perhaps ask the CCT to let us have an estimate of the cost involved in a demonstration of planting trees on a small scale, & in consultation with the Bd of Rev. We may then be in a position to know whether even a demonstration should be taken up at present.

Can
18/9/40

C 19.9.40.

A2 ~~If we can~~

The problem is a serious one & I understand that a considerable amount of damage to Agl land has been done by these drifts sand. The process is going on steadily & the sand covered area must inevitably extend. I cannot see however that it is necessary to plant a belt of trees a furlong wide nor

xx-70

that we should acquire private lands
for the purpose

We have received a considerable
amount of literature from America
on what has been done there to
prevent damage to land from
high winds by planting belts of trees
in the middle west of the USA
where dust storms do much damage
to cultivation please look that
up. My impression is that
a much narrower belt would suffice
& we also plant casuarinas
1 furlong wide for 2 miles
down from the mogan route
This will cost about £1000 /-

VH
21.9.

P. 232 n.

CM
28/9/70

To A.S.

A_2's note on p 17 above - A_2 is - apparently referring to the publications on soil erosion which were received from the American Consul These publications were all sent to the Director of Agriculture who has transmitted them to the Principal of the Agricultural College. The publications dealing with 'Tree Planting for Wind erosion Control' have been obtained from the Director and put up. It will be seen that in one case three rows of Chinese elms were planted one rod apart, with trees 6 feet apart in the rows.. and that these trees have stopped the sand from the neighbouring field from blowing in. The belt of trees was therefore only about 17 yds (one rod is equal to 5½ yds) wide. It would seem therefore that it would be more than sufficient to plant ~~Casuarina~~ a belt of Casuaria one furlong wide

C/o. 6th / 41
& So. 854 (A)
4-4-41

L 28-8 the Farmer Bulletin, no. 1771 - ('U.S.A.' & 'Ind.')

18520-I/39.

The Suggestion may perhaps be put to the C.C.F. and his remarks obtained. Subject to orders, - a draft Cur. is sub. for approval.

Cir
16.10.40 Com
5 17.10.40

16/10/40.

A2

HH
17.10.

C. 17.10.40
with 2 Corr.
R.24-10-40.

Issued as Cor. No. 101/30.C/40-dd 24.10.40.
from the C.C.F. No. 6500/39. Dtd. 16.1.41.
To U.S.

A detailed scheme has been prepared for afforesting the Nagari Bank between the Nagari Agricultural Farm in the South and the Mokka Plantations in the North, 8 miles in length. If the belt to be planted is one furlong wide the area will be about 650 acres. The Cost of establishing the plantations is estimated at Rs 83,850/- at the rate of Rs 129/- per acre. If the width of the belt is 2 furlongs, the area and Cost will be exactly double.

2. The Conservator, Billavy Circle states that we might try 25 acres in the

1 C/

first year and increase it according to funds available. Some 50 acres of
L 31 C1 x
Poramboke land are available between the Nagavi Bridge and the water works, which can be tackled first.

3. The C.C. recommends that the whole scheme may be accepted in principle and work at the rate of
L 27 C1 x
25 acres a year for the next two years may be approved. In the light of the experience thus gained the scheme will then be reviewed and if necessary, revised. The cost of raising and maintaining a plantation of ~~& Poramboke land during the~~ 25 acres ~~taken in hand~~ first year (1941-42).
A L 65 Cf
~~would be~~ is Rs 3230/. ~~(exclusive of cost of acquisition of private land, if any).~~

For orders whether the C.C's recommendation may be accepted. The proposal will ordinarily have to be treated as a part II Scheme, but in view of A2's remarks in P 16 - above, ~~The remarks of Rev. and Fin. may be~~ ~~omitted~~ it is for consideration whether the scheme will be sanctioned now. The remarks of Rev and Fin. may be omitted.

N
22/1/41

Note from p. 19 N. F.

The C.C.F. may be asked to make a beginning in the

28.1.41

50 acres of poramboke land available (at the rate of 25 acres a year). If the results are promising, the full scheme can be brought into force & the planting rate per year increased so as to complete the whole scheme within 12 to 15 years.

28.1.41
S

Yes. It is desirable to start the planting in 941-42

28/1

Rev

Ans

Rev. Dept Dev. U.O. No. 10130 C/40-5
3.3.'41

To L.S. - The file relates to the question of preventing by afforestation sand drifts from the Hafari rivers (in Bellary Dt).
Please see the notes from p. 13 above.

ASST. SECRETARY TO GOVERNMENT
875
3 - MAR 1941
7 3 pm
REVENUE DEPARTMENT

2. The afforestation scheme will be carried out by the Forest Dept. and it seems also that the lands to be afforested will be declared (and will be under the control of Forest Dept. as reserved lands) - vide X at p 7 c/f. This dept. does not seem to be directly concerned with the problem

25

If preventing sand drifts: Dev. dept's proposals at pp 20 - 21 above, may be accepted. The file may be passed on to Finance

4/3/41

Rev. Cus no 8755-F/41-1

7/3/41

Finance (Exp.)

07777 Exp

Pp 35-45 C.L.

Please see the scheme for afforesting the eastern bank of the Hagari river for a distance of about 8 miles from the northern limit of the Agricultural farm at Hagari, prepared by the D.F.O., Anantapur, and the remarks thereon of the C.C.F 25-27-C.F. The object of the proposal is to stop the damage that is being caused annually by the drifting sands of the Hagari river, and it is proposed to bind the sands by planting trees. For a start, an area of 25 acres is proposed to be taken up in the first year.. The cost of raising the nursery, of raising and maintaining a plantation of 25 acres during the first year and of watering and mulching the plantation till the second monsoon breaks is estimated at Rs 3,230. The land on which trees are to be planted is Govt land and no private land need be acquired now.

~~The usual return is not insisted during the first five years, it is estimated that if a period of 20 years is taken, the average return on invest-~~

~~23~~ 76

The C.C.F. recommends that the scheme may be accepted in principle, that work at the rate of 25 acres for the next two years may be taken up and that the scheme may be reviewed in the light of experience thus gained and, if necessary, revised. The total cost of the whole scheme of planting trees to the width of one furlong is estimated at Rs 83,850/- If trees are planted to a width of two furlongs, the total cost will be double that figure.

2. ~~Returns as a result~~ The financial return of planting ~~up~~ 25 acres as calculated by the D.F.O. are as shown below:-

		Rs
A. Expenditure.		
Nursery	...	300
Raising and maintenance * during first growing season		2330
**Cost of maintenance in the second year.		600
	Total A.	3230

*includes the cost of a forest guard and watcher.
** does not include provision for watcher.

(It has been assumed that no expenditure will be incurred on maintenance from the third year).

B. (1) Revenue from the 6th year to the 20th year.		280
(2) Revenue in the 20th year		1100
	Total B	1380
Average per year		69
or 2.1% on the capital invested. (expenditure in the first & second year)		

The above figures do not include the pay of a forest guard and watcher from the second year onwards. It is possible that one ~~good~~ guard and watcher would be sufficient for this block and the block proposed for the second year. If half the pay of the guard and watcher is debited to the first block the position would be as follows:-

~~Expenditure as at A~~	~~3330~~	
Half the pay of the guard and the watcher for 19 years.	~~2693~~	2,693
	~~5923~~	
Deduct revenue for 20 years	~~1380~~	1,380
	~~4543~~	1,313

Loss

There will thus be a loss of ~~over Rs 4,500~~ Rs. 1,313 in the course of 20 years. But it appears that items 4 & 5 under Revenue at page 45 c.f. are of a permanent character, and that Rs 1,100 will be a recurring item of receipt. If the above presumption is correct, the scheme will be highly remunerative from the 21st year.

I see no thing X Corr

(Interest on capital has not been taken into account as the scheme will presumably be financed from revenue)

3. Attention is invited to portions marked B & D of the Board's reference at page 18 c.f. A-2 has noted as follows:-

> "The problem is a serious one and I understand that a considerable amount of damage to agricultural land has been done by this drift sand. The process is going on steadily and the sand covered area must inevitably extend."

p 16 ante

~~Government~~ orders.

4. Funds.- Afforestation is a normal activity of the Forest Department and the proposed expenditure is not, therefore, one on a "new service". But the scheme is one which would ordinarily have been treated as a Part II Scheme. The intention is to introduce it during 1941-42. Development may, therefore, be asked to circulate the case to A-1 also and to consider the source from which the expenditure in 1941-42 will be ~~mix~~ met.

A ! Corr

12.3.41 p 23 ante

Through P. II

B. G. form 4

12.3.41

12.3.41

S

K above. The revenue position is rather obscure. It does not appear to be the case that extensive sylvicultural cuttings will be available every year after the 20th. After one complete large scale cutting of an area it will take years before similar cutting will again be possible. It seems safer assumption that the report has made the most of the probable revenue receipts and that the average rate

25 // 78

will not be more than about 2%. Even
as this scheme seems to be a justifiable
experiment - and if the first place proves
successful it might be extended if
no better return than 2% could be got.
Finance dept may accept the proposal.

Sd/
16/3

Dev

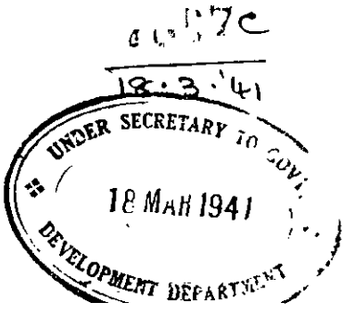
Fin no 7777 Expdr
17.3.41

Dev Deptt.

Jo u.s.

~~The Finance Deptt accepts the~~
~~proposal & a draft order is submitted to~~
~~Govt may be circulated to~~ A2 + A1 with Reference
to Finance note at 'A' ans 24 above

Sd/
22-3-41



Dev Dept

To D.S.

This file relates to the question of preventing sand drifts from the Hagari River in the Bellary Dt., by afforestation. The C.C.F. has submitted a Scheme, prepared by the D.F.O., Anantapur, for afforesting the eastern bank of the river for a distance of about 8 miles from the northern limit of the Agriculture farm at Hagari. The total cost of planting trees to a width of one furlong is estimated at Rs 83,850. If trees are planted to a width of two furlongs, the cost will be double that figure.

The C.C.F. recommends that the Scheme may be ~~accepted and provided for~~, that work at the rate of 25 ..... for the next two years may be taken up and that the Scheme may be reviewed in the light of the experience thus gained and, if necessary, revised. It is stated that some 80 acres of porambok

~~2~~ 80

10130-C.

are available between the Hagari bridge and the water works and that a beginning may be made in this area. The cost of raising the nursery, of raising and maintaining a plantation of 25 acres during the first year and of watering and mulching the plantation till the second monsoon breaks is estimated at Rs 3,230. Rev. and Fin. Depts. have accepted the proposal to make a beginning in the 50 acres of reserve land. A draft order ~~approving the scheme~~ is ~~sub~~ put up. It may be circulated to A_2 and A_1 for approval.

(Notes from p. 26 N.F.)

Draft order for approval.

22/3/41.
24

26.3.41 Cal.
5 Mds.

A_2

C.3.4.41.
11-30 a.m.

A_1 ~~Trees have been planted~~ ~~in the plantation as~~ a wind break to stop soil erosion by wind, dust & sand drifts etc. ~~The roots are~~ ~~required to be~~ ~~of trees a furlong~~

10130.

84
01

Where are the publications referred to above? Were they sent to C.C.F. for reference?

HO
54

To H.S.

These books are now in the Agri: College, Coimbatore — do the D.A. says. This should be returned if necessary
Calls

The publications referred to were ~~sent~~ returned to the Director of Agriculture from whom they were obtained. They were not sent to the C-C-F. Only A_2's Suggestion at 'K' on p 17-above was sent to him. It will however appear from the T.m. on p 26 ante (R.) that some of this kind publications are available with the C-C-F.

) Should this be put with the file

H
7/4/41.

S 7.4.41
Calls
S Sinha

C. 8/4/41
R 8/4-41
S Sinha

Ar

We do not want big areas we want long lines. — it is worse to plant embach blocks for experimental purposes it will be better to plant long thin lines 4 or 5 rows wide at most it can be made wider if nec. but it seems unlikely that there will be much saved

M

HO
8/4

29.

8V/ To D.S.

A_2 has ordred that it would be better to plant a long thin line 4 or 5 trees wide - and that it can be made wider later on if necessary. The trees will probably be about 7 feet apart - and if 5 trees are ~~to be~~ planted, the width of the strip will be about 10 yds. The Govt. land reported to be available is between the Hagadi Rly Station - and the Water Works. From the Sketch furnished by the C-C-F. the length of the strip - appears to be about 6½ furlongs. So the area that can be planted up during 1941-42 will be about 3 acres. I am asked whether the C-C-F. may be asked to plant up this area during 1941-42 and submit a report on the results of the planting towards the end of the year with definite proposals for the extention of plantations in the light of the experience gained.

It may however be noted in this connection that the

Please see Bellary Conservator's view before orders whether may be issued as suggested or whether he should be asked to submit a full scheme for the entire distance of 8 miles on the planting of a thin strip and reduce the cost of cultivation etc. as far as possible.

11-4.

83-30

'A' I. ?, F. F.

Conservator of Forests, Bellary Circle has pointed out that the Hoska plantations are 5 furlongs in width and that sand dunes are still formed beyond their limits. For orders.

9/4/41.

11.4.41

A2 has already stated that it is no use planting as Compact blocks for experimental purposes. Ask C.C.F. to send us an estimate at once for planting a thin line for the entire distance — about 10 yards wide & begin with

18/4/41.

19.4.41

[Issued as Memo. No. 10130.C/40.7, d. 21.4.41.

[C.No.22391.C/41] // 49 SOC.F.

From the C.C.F., Ref. No. 6500/39/D1, d 18.8.41.

To Under Secy.,

The C.C.F. has now

p. 51 C.F.

submitted an estimate for Rs 5,900

31
8/4

for planting 5 rows of trees in a strip @ 1 anna 5:1 cf.
of about ½ chain wide along the
eastern bank of the Hagari river for
the entire distance of 8 miles. He proposes para 6, p.5 c/s.
to complete the planting along the entire
distance in the course of 3 years, the rate
of progress depending on the success gained.
He is however not convinced that a para 5, p.5 c/s
single belt half a chain wide would be
effective and would prefer a belt of
one chain. If the width is increased to para 5, p.5 c/s.
one chain the estimate will have
to be increased by Rs. 2,000/-. A₂ has p.28 above
already ordered that the belt should be
only 4 or 5 trees wide. The width may
therefore be half a chain and the estimate } may be accepted.
of Rs. 5,900 may be accepted in this Dept.
As the expenditure during the current
year is not likely to be large, it
may be possible to meet the same from
the sanctioned allotment. The Rev. With ref. to para 7, p.1 c/s.
and Fin. Depts. may see for remarks,
if any, before circulation.

Dev. u.o. no.
10730-C/40.9
2.9.41.
12 SEP 1941
31438

12.8.41.
27

Rev

Fin

27.8.41
S

27.8

85

Rev. Dept.

To W.S.

The file relates to the question of preventing sand drifts from the Hagari river in the Bellary district by afforestation. The file has been sent to this dept. with reference to A in para 2 at p. 50 C.F. No remarks seem to be called for. The file may be passed on to Fin.

Thro' G.

5/9

Rev. No. 3143 F/41-1

8/9/41

5/9

5.9.41.

8.9.

FIN

Finance(Expre.)

(Previous Finance note on pages 22-25 ante.)

With reference to the orders of A-2 on page 28 ante, ~~ante~~, Development propose to sanction the planting of a narrow shelter-belt of trees along the eastern bank of the Hagari river for a distance of about 8 miles. The planting will be undertaken on a few furlongs in the first year completing the 8 miles in about 3 years; the rate of progress would depend on the success gained.

2 The statement at page 51 C.F. sets out the immediate financial effect of the proposals.

3 The total estimated cost for the first two years together with works out to Rs 5,900/- . The ultimate cost of the scheme will depend on the progress achieved

*1st year Rs 4,800
2nd year 1,120
5920
or 5900

The work is expected to expand into a considerable scheme of afforestation. The C.C.F. says that the financial possibilities can be better gauged after the two or three years preliminary work now proposed. The nursery work is to allow plantable being under stock in 1942 to be started in December 1941. /- cf. para 9 on page 50 C.F. Dev. accordingly propose to introduce the Scheme in the Current year. /A

3. Funds.- Development point out that the expenditure during the current year will not be large and that it may be possible to meet the same from the sanctioned allotment under "19. Forest"

As the intention is to introduce the scheme in the current year, Development may be asked to circulate the case to A-1 also as pointed out in para 4 of this department's note on page 24 ante. /P

A o.L.

12/9/41
PWP
12.9.41

12/9/41

S
12/9

No hurry as the expenditure will be largely unprofitable unless something more on the lines of C.C.F.'s proposals is attempted. That might not apply so much to a series of lines as bells (20 to 150 yards apart as presumably separate wells, watchmen etc & watchmen would be needed for each bell but it would apply if the optimum bell is double what is now proposed.

15/9 Sec

Finance U.O. No. 3047/Sec/41
13-9-41

ASSISTANT SECRETARY TO GOVERNMENT
15 SEP 1941

Development Department.

To Under Secretary.

(Previous notes need not be read).

With a view to prevent damage to agricultural land caused by the drift of sand from the Hagari river in the Bellary district, the C.C.F. submitted in Jan. 1941, a draft scheme for afforesting the eastern bank of the river to a distance of about 8 miles from the northern limit of the Agricultural Farm at Hagari up to the Moka Plantation in the north. The details of the scheme are given at pages 35-40 c.f. The Govt. however did not accept the scheme. A2 observed that it was no use to plant compact blocks for experimental purposes and that it would be better to plant a long thin line 4 or 5 trees wide to be further ~~increased~~ widened later, if found necessary. The C.C.F. was accordingly requested to submit an estimate for planting a thin line about 10 yards wide, to begin with, for the entire distance.

2. The C.C.F. has now submitted an estimate for Rs. 5,900 for planting a narrow shelter-belt of trees (5 rows of trees in a strip about half a chain in width) along the eastern bank of the river for a distance of about 8 miles. The planting is to be undertaken on a few furlongs in the first year completing the 8 miles in about 3 years, the rate of progress depending on the success gained.

3. In order to check the sand drift effectively, the C.C.F. considers it necessary to have a succession of belts 100 to 150 yards apart, the first belt being in the river bed as low down as it is possible to raise tree growth satisfactorily and the last near the outer edge of the sand invaded area on the eastern bank. A belt at high flood level on the western bank is also said to be desirable. Although the C.C.F. considers that a single belt would be

35 of 86

ineffective, he states ~~the author~~ that initial work could be on a single belt but suggests that the width of the belt should be one chain. para 5, p 50 c/f

The file may now be circulated for orders whether the belt may be ½ chain wide and whether the estimate will be accepted. Finance Department has stated that the case should be circulated to A1 also. p. p 35 ante

(Note from p. 34 N. F.)

16/9/41. The estimate for Rs 5900 submitted by the CCF for planting a narrow shelter-belt of trees in a strip of about ½ a chain in width may be accepted. I have put up a draft order which explains the proposal. It is for approval.

The publication of the order referred to in A2's note and the instructions are contained in office Memo. No. C.C.F. dated the ... The matter is now before A1 for orders. ... on the N.F. 16/9.

17.9.41 CM 18/9

A2 16/9 19.9.

A1 19.9.41

Issue. CM 20/9

20/9/41

Issued as G.O. 1728 Dev. d. 22.9.41

89

C.F. 17.

DRAFT FOR APPROVAL.

DEVELOPMENT DEPARTMENT.

	Date.	Initials.
When received for fair copying.		
When copied ..		
When examined..		
When signed ..		
When despatched.		

SUBJECT:— Regeneration - FORESTS -/Bellary - Hagari river - Sand drifts - Prevention by afforestation Scheme - Sanctioned.

READ AGIAN ....., dated ..... 19....,

" " ..... " ..... 19.....

READ *ALSO*:—C/40 D1

No.10130- From the C.C.F. Ref, No. 6500/39 dated 16-1-1941.

" Memo. to C.C.F.No.10130-C/40-7 dated 21-4-41. 19.....

" From the C.C.F Refce.No.6500/39/D1 dated 18-8-1941.

Order / ~~**Resolution**~~ **Ms.** / ~~**Rout.**~~ **No.** 1728, **dated** 22/9/41 **19**....

With a view to prevent damage to agricultural land caused by the drift of sand from the Hagari river in the Bellary district, the C.C.F. submitted a draft scheme for afforesting the eastern bank of the river to a distance of about 8 miles from the northern limit of the Agricultural Farm at Hagari up to the Moka plantations in the north. He was not, however, in favour of the whole scheme being brought into force at once. ~~straightaway.~~ He suggested that it might be accepted in principle, that work at the rate of 25 acres a year for the next 2 years might be done and that in the light of the experience gained the scheme might be reviewed. The Government considered

21/1 26-27 C.f.

X 10/

that it would not be useful to plant compact blocks for experimental purposes, but that it would be better to plant a long thin line 4 or 5 trees wide at most, to be further widened later ~~on~~, if found necessary. ~~The Chief Conservator was accordingly requested to submit an estimate for planting a thin line about 10 yards wide, to begin with, for the entire distance.~~ The Chief Conservator has ~~accordingly thereupon~~ submitted revised proposals for planting a thin line about half a chain wide for the entire distance. The proposals are approved.

Mat pp 2 c n f.

pp 49-51 c f

2. The expenditure during 1941-42 should be met by reappropriation from the sanctioned grant. If this is not possible the C.C.F. is requested to submit proposals for the additional allotment necessary in due course.

3. The C.C.F. is requested to see that the scheme is completed within 3 years and to submit a report on the progress made at the end of 1942.

17.9.41

Com
18/9

Copy to CCF only unless Stated
24/9

To the Chief Conservator of Forests. (with Skeleton Finances)
,, A.G. thro' the Fin. Dept. A&O
,, Bd. of Rev. thro' Rev. Dept.
Copy for Section 4 - S.F. (Addl to S.F. General)
Call Book: 10 - 1 - 43.
Copy to the Information Officer and Special Press Adviser

Entered in C.B. No 413 against 10-1-43.
BR
23/9/41.

24/9

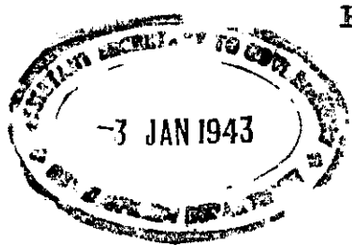
91

C.F. 32.

In reply, please quote number, date and short title.

FOREST DEPARTMENT.

Received ..... *Registered* 139 c
4.1.43.



From (Name) W.G. Dyson Esq., I.F.S.,

(Designation) Chief Conservator of Forests,

Post Box _____, (Station) Coimbatore.

Telegraphic Address _____

To

The Secretary to Government,
Development Department.

Reference *No.* 11386-42, *dated* 31st December 1942.
Sir, D1

Subject: FORESTS - Bellary - Hagari river - Sand drifts - prevention by afforestation- Report on progress in 1942.

Enclosures _____

Ht 89-90 of (G)

Reference: G.O.No.Ms.1728, Development, dated the 22nd September 1941.

Spare Copies _____

As desired by Government I submit a report on the ~~work~~ progress made with the Hagari wind-belt scheme.

A1 2. A length of just over 1½ miles out of the total distance of 8 miles was planted in this, the first year of the scheme. I inspected the work on the 4th December 1942. The results are excellent, and far in excess of my expectations; but I must add that the expenditure has also greatly exceeded my estimate. Watering charges, for example, were about Rs.1,000/- in 4 months against a provision of only half of this amount for a full year, and the hot weather is yet to come. The year, it may be mentioned, has been an exceptionally unfavourable one. There was only about 2" of rain between June and early December.

3. I am not unduly perturbed about the high costs. I gave the District Forest Officer more or less carte blanche in this initial work, and he has at any rate produced splendid results. A high standard of what can be done has now been set and in the work of the next two years it will be our task to bring costs down to a reasonable level without sacrificing results.

The most successful species has been Prosopis juliflora, with Pithecolobium dulce and Albizzia lebbek next.

2.1.43

for CHIEF CONSERVATOR OF FORESTS.

2/1

2/1/43.

(5)

139 C/43

Dev. Dept. Issue.

Memo. No. 139-C/43-2 dated 27-1-43.

Sub:- Forests - Regeneration - Bellary - Hagari river - Drifts - Prevention by afforestation - Scheme - Report on progress.

Ref:- From the C.C.F., Ref. No. 11386-42-D1, dated 31-12-42. p1 above

The C.C.F. is requested to submit a report on the further progress made, at the end of 1943.

To the C.C.F.
C.B 10.1.44.
Entered as B. No. 56
C. Dev. U.O. No. W139-C/43-1
18.1.43.

To F.S.,

The C.C's report on p.1 above is submitted for perusal. The C.C.F may be asked to submit a report on the further progress made at the end of 1943. Subject to orders, the draft above is for approval. The file may be sent to Fin. for perusal before issue of the Memo.

23 JAN 1943
19 JAN 1943

Finance (Exp. A.)

May be perused & returned to

Dev

Dev

1728

19.1.43

22.1.43.

May issue
22/1/43.

A2 may be the C.C.F's report on the

A1

C: 25/1
R 26-1-43

[Issued as Memo No. 139-C/43-2, d. 27-1-43]

17439 13

C.F. 32 (a).

FOREST Department

From (Name) W.G. Dyson Esq., I.F.S.,

Designation Chief Conservator of Forests,

Station Egmore, Madras.

Received ..... Registered .....

To

The Secretary to Government,
Development Department,
Fort St. George.
(Madras)

Enclosures:

Ref. No. 589/44-D1. dated 19th March 1944.

Sir,

Subject:- Forests - Regeneration - Bellary - Hagari River - Drifts - Prevention by afforestation - Scheme Report.

Refce: Government Memorandum No. 139-C/43-2, Dev., dated 27-1-1943.

Government Memorandum No. 2544-C/44-1 Dev., dated 19-1-1944.

A further length of about 2½ miles was planted in 1943. In view of the rapid growth obtained in the previous year the espacement was increased, with a corresponding increase in the width of the belt. I have not seen the current year's work. From the Conservator's report results appear to be fair, but not spectacular as was the case in the previous year. Costs have been substantially reduced, but are still very high.

2. I hope to inspect the work in the course of the

94

next few months, and will submit a further report to Government about December 1944.

For Chief Conservator of Forests.

21/3

21/m

To A.S.

The letter from C.C.F. on pp 1-2 above is submitted herewith. This may be Lodged and added to the G.O. at (5) with a C.B. entry against S.I. 1945

CPA. 23.3.44

23/3/44.

25.3.44 S Ag ... my little file.

C.B. Entry No. 674

31/4/44

3/3/44

Ag

29/3/44

28/3/44

Memo No. 1068/40-1 dated

Sub: Irrig - Regeneration - Belary
- Hayari town - Drig
Investigation by assistant -
Scheme - report -

Ref. From C.E.I. Rep No. 584/4421
dated 19.3.44

—

to state
the C.E.I. is requested to
the further report

the 2nd paragraph X of the letter dated may 93-94 of Dr. (X)

be expected

Dr.

To. The C.E.I. ✓
C.E.2. Kol-

Yours

C.F 32 (a).

Forest Department

From (Name) W.G.Dyson Esq.,I.F.S.,

Designation Chief Conservator of Forests,

Station Egmore, Madras.

Received 26 JAN 1945 Registered 5996

To

The Secretary to Government,
Development Department,
Fort St. George, Madras.

Enclosures:

Ref. No. 589/44.D1. dated 23rd January 1945.

Sir,

Subject: Forest - Regeneration - Bellary - Hagari river - Drifts - Prevention by afforestation Scheme - Further report.

NN 93-44 (N)

NL 2-4 0% RL 6'cc

Ref. Paragraph 2 of my Reference No. 589/44.D1., dated the 19th March 1944.
Government Memorandum No. 1068-C/45-1, Development, dated the 9th January 1945.

C

I inspected the work on 8th and 9th January, and am impressed by the results obtained. A narrow strip along the whole length from the Agricultural Department's Farm near Hagari to the Moka Plantation has now been planted -- a distance of about eight miles. Growth has been rapid and in many places an impenetrable thicket has been formed already. The protection afforded by the planted belt and the presence of people working on the plantation have to a considerable extent excluded grazing in the area between the belt and the river-bed. This has brought about a very noticeable increase in vegetation on this sandy area

16686/45

with satisfactory results from the point of view of fixing the shifting sand. More satisfactory still is the way in which this protection from cattle has enabled babul to come in naturally.

In a separate reference (my Reference No. 9610/43.C2, dated the 23rd January 1945) I have today submitted proposals to Government for a large scale extension of this work.

for Chief Conservator of Forests,
Madras.

24.1.45

ks.24.1.45.

D.O. D/S C.

D. A.S.

The letter from C.C.F. on D/S 1-2 above is submitted for perusal. For orders whether it may be lodged and added to the papers at (N) ~~circle~~ above

Encl: 9/11 as
31.1.45.

1.2.45 Sig. 4/2/45 12.2.45 Delhi